

**To:** Mullin, Michelle[Mullin.Michelle@epa.gov]; Ramanauskas, Peter[ramanauskas.peter@epa.gov]; Liu, Xiaoyu[Liu.Xiaoyu@epa.gov]; Thompson, Bob[Thompson.Bob@epa.gov]  
**Cc:** Moore, Kendall[moore.kendall@epa.gov]  
**From:** Thomas, Kent  
**Sent:** Thur 5/19/2016 9:00:30 PM  
**Subject:** RE: Epoxy Encapsulant ORD Study

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,,  
Hi Michelle:

I don't think anyone in ORD did penetration measurements. I did a quick look and did not see any easily accessible data. I wonder if Kim Tisa in Region 1 might know more about this.

Also, not clear whether you are asking about penetration depth into a material, or spreading distance on the surface away from the source.

Best wishes,  
Kent

**From:** Mullin, Michelle  
**Sent:** Thursday, May 19, 2016 4:51 PM  
**To:** Ramanauskas, Peter ; Thomas, Kent ; Liu, Xiaoyu ; Thompson, Bob  
**Cc:** Moore, Kendall  
**Subject:** RE: Epoxy Encapsulant ORD Study

Thank you all-

Follow up question: Does ORD have any estimate on how far into the substrate PCBs can migrate? 1", 2", 6"? Or is it too variable to know without sampling? We're trying to establish a protective lateral buffer around the caulk location for epoxy application on the substrate, but currently have no substrate characterization data, and may not be able to get any.

Thanks,

**Michelle Mullin**

PCB Coordinator

US EPA Region 10

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206-553-1616

[www.epa.gov/region10/pcb.html](http://www.epa.gov/region10/pcb.html)

**From:** Ramanauskas, Peter

**Sent:** Thursday, May 19, 2016 1:08 PM

**To:** Thomas, Kent <[thomas.kent@epa.gov](mailto:thomas.kent@epa.gov)>; Liu, Xiaoyu <[Liu.Xiaoyu@epa.gov](mailto:Liu.Xiaoyu@epa.gov)>; Thompson, Bob <[Thompson.Bob@epa.gov](mailto:Thompson.Bob@epa.gov)>

**Cc:** Mullin, Michelle <[Mullin.Michelle@epa.gov](mailto:Mullin.Michelle@epa.gov)>; Moore, Kendall <[moore.kendall@epa.gov](mailto:moore.kendall@epa.gov)>

**Subject:** RE: Epoxy Encapsulant ORD Study

Thanks very much, Kent/Xiaoyu/Bob!

Peter

**From:** Thomas, Kent

**Sent:** Thursday, May 19, 2016 3:05 PM

**To:** Ramanauskas, Peter <[ramanauskas.peter@epa.gov](mailto:ramanauskas.peter@epa.gov)>; Liu, Xiaoyu <[Liu.Xiaoyu@epa.gov](mailto:Liu.Xiaoyu@epa.gov)>; Thompson, Bob <[Thompson.Bob@epa.gov](mailto:Thompson.Bob@epa.gov)>

**Cc:** Mullin, Michelle <[Mullin.Michelle@epa.gov](mailto:Mullin.Michelle@epa.gov)>; Moore, Kendall <[moore.kendall@epa.gov](mailto:moore.kendall@epa.gov)>

**Subject:** RE: Epoxy Encapsulant ORD Study

Hi Peter:

In general, the three epoxy coatings that were tested had the best performance in the research. But there are nuances to the research results that are important to understand, especially performance differences for lower/higher PCB concentrations and the level of effectiveness over long time periods. Post encapsulation monitoring is recommended. I am copying my colleagues Xiaoyu Liu and Bob Thompson in ORD/NRMRL where the work was done; they might be able to give you the best answer.

Here is a link to the research fact sheet on encapsulation:

[https://www.epa.gov/sites/production/files/2015-08/documents/pcb\\_encapsulation\\_fs.pdf](https://www.epa.gov/sites/production/files/2015-08/documents/pcb_encapsulation_fs.pdf)

Here is a link the research report with more details:

<https://www.epa.gov/sites/production/files/2015-08/documents/p100fa51.pdf>

Best wishes,

Kent

**From:** Ramanauskas, Peter

**Sent:** Thursday, May 19, 2016 3:41 PM

**To:** Thomas, Kent <[thomas.kent@epa.gov](mailto:thomas.kent@epa.gov)>

**Cc:** Mullin, Michelle <[Mullin.Michelle@epa.gov](mailto:Mullin.Michelle@epa.gov)>; Moore, Kendall <[moore.kendall@epa.gov](mailto:moore.kendall@epa.gov)>

**Subject:** Epoxy Encapsulant ORD Study

Hi Kent,

Reaching out to you as it seems like Zhishi Guo is no longer with ORD. We're working on a caulk removal project in Region 10 where the school is looking for some guidance on the best epoxy to use as a substrate encapsulant. The attached presentation indicates that "no solvent" epoxies performed well as encapsulants. There is a preference in our situation for low/no VOC if possible.

Can you shed some more light on these "no solvent" epoxies that we can relay to the school as guidance on which they might wish to consider for use?

Thanks!

Peter